Dam, Floodwater Retarding

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 402 04/02

DEFINITION
A floodwater retarding structure is a single purpose dam designed for temporary storage and controlled released of floodwater.

PRACTICE INFORMATION
The purpose of a floodwater retarding structure is to reduce flood damage downstream by controlling the release rate of flood flows. These structures may also permit the use of more economical channel modifications and other downstream works of improvement.

This practice requires a very thorough site investigation to assure the following:

- Topographic, geologic, and soil conditions are satisfactory for the construction, operation, and maintenance of the structure (s).
- Conservation treatment above the proposed structure is satisfactory so that sediments in the runoff will not be excessive.
- Environmental impacts are accounted for in the overall plan.

Dams constructed as floodwater retarding structures are normally part of a watershed plan sponsored by an organized group of local people with a vested interest in the natural resources of a specific watershed.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages list the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, and soil. Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

STATE		FIELD OFFICE		DATE	

PRACTICE: 402 Dam, Floodwater Retarding	NOTES:
RESOURCE: SOIL **RESOURCE CONCERN: EROSION**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SHEET AND RILL	N/A
WIND	N/A
EPHEMERAL GULLY	N/A
CLASSIC GULLY	N/A
STREAMBANK	N/A
IRRIGATION INDUCED	N/A
SOIL MASS MOVEMENT	N/A
ROADBANK/CONSTRUCTION	N/A
OTHER	
RESOURCE CONCERN: **SOIL CONDITION**	
SOIL TILTH	N/A
SOIL COMPACTION	N/A
SOIL CONTAMINATION	
• SALTS	N/A
• ORGANICS	N/A
• FERTILIZERS	N/A
• PESTICIDES	N/A
• OTHER	
DEPOSITION/DAMAGE	
• ONSITE	N/A
• OFFSITE	N/A
DEPOSITION/SAFETY	
• ONSITE	N/A
• OFFSITE	N/A
OTHER	
RESOURCE: **WATER** RESOURCE CONCERN: **WATER QUANTITY**	
SEEPS	significant increase in seepage hazard
RUNOFF/FLOODING	sign. decrease in runoff/flooding
EXCESS SUBSURFACE WATER	situational concerning excess subsurface H2O
INADEQUATE OUTLETS	N/A
WATER MGT. IRRIGATION	
• SURFACE	N/A
• SPRINKLER	N/A
WATER MGT. NON-IRRIGATED	N/A
RESTRICTED FLOW CAPACITY (H20 convey.)	
• ONSITE	slight improvement in onsite drainage
• OFFSITE	slight improvement in offsite drainage
RESTRICTED STORAGE	N/A

RESOURCE: **WATER** RESOURCE CONCERN**: WATER QUALITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
GROUNDWATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SALINITY	N/A
• HEAVY METALS	N/A
• PATHOGENS	N/A
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SUSPENDED SEDIMENTS	sign. reduction in SWater contam./susp. sedi.
• LOW DISSOLVED OXYGEN	N/A
• SALINITY	insignificant
• HEAVY METALS	N/A
• WATER TEMPERATURE	N/A
• PATHOGENS	N/A
AQUATIC HABITAT SUITABILITY	N/A
OTHER	
RESOURCE: **AIR** RESOURCE CONCERN: **AIR QUALITY**	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	N/A
AIRBORNE CHEMICAL DRIFT	N/A
AIRBORNE ODORS	N/A
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: **AIR CONDITION**	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

RESOURCE: **PLANT** RESOURCE CONCERN: **SUITABILITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SITE ADAPTATION	N/A
PLANT USE	N/A
OTHER	
RESOURCE CONCERN: **CONDITION**	
PRODUCTIVITY	N/A
HEALTH, VIGOR, SURVIVAL	N/A
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
ESTAB., GROWTH, HARVEST	N/A
NUTRIENT MANAGEMENT	N/A
PESTS	N/A
THREAT/ENDANGERED PLANTS	N/A
OTHER	
RESOURCE: **ANIMAL** RESOURCE CONCERN: **HABITAT**	
FOOD	slight improvement in animal habitat/food supply
COVER/SHELTER	slight improvement in animal habitat/cover,shelter
WATER (QUANTITY & QUALITY)	sign. improvement in animal habitat/water\
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
POPULATION BALANCE	slight improvement in animal mgt./pop. balance
THREAT/ENDANGERED ANIMALS	slight benefit to threat./endangered animals
HEALTH	slight improvement in animal mgt./health
OTHER	
RESOURCE: **HUMAN** RESOURCE CONCERNS**: ECONOMIC CONSIDERATIONS**	
PLAN / COST EFFECTIVENESS	significantly cost effective
CLIENT FINANCIAL CONDITION	N/A
MARKETS FOR PRODUCTS	N/A
AVAILABLE LABOR	N/A
AVAILABLE EQUIPMENT	N/A

RESOURCE: **HUMAN** RESOURCE CONCERN: **SOCIAL CONSIDERATIONS**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
PUBLIC HEALTH AND SAFETY	sign. improvement in public health & safety
PRIVATE/PUBLIC VALUES	sign. improvement in private/public values
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	N/A
TENURE	N/A
OTHER	
RESOURCE CONCERN: **CULTURAL CONSIDERATIONS**	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	